Shut-down periods of power plants

1816. SHRIMATI SYEDA ANWARA TAIMUR:
SHRI VIJAY J. DARDA:

Will the Minister of POWER be pleased to state:

(a) whether the shut-down periods of our power generating plants are in accordance with the internationally accepted norms;

(b) if so, what is the global shut-down duration of power plants;

(c) whether Government have ever made an in-depth study of shut-down durations of public and private sector plants; and

(d) if so, the findings thereof and whether there is any difference in duration and annual periodicity?

THE MINISTER OF POWER (SHRI SUSHILKUMAR SHINDE): (a) and (b) Annual shutdown period of thermal (coal/lignite) & hydro power plants in the country during the year 2006-07 is given below:

Category	Planned Maintenance (%)	Forced Outage (%)	Total (%)
Thermal	8.43	7.85	16.28
Hydro	7.03	3.65	10.68

The norms followed for annual overhaul period of thermal power stations (as recommended by the Kukde Committee) are:

- 2002/210/250/500 MW Coal based Units: Average 28 days/year (5/6 years Rolling Plan)
- Less than 200 MW Coal based units: Average 33 days/year (5/6 years Rolling Plan).
- 200/210 MW lignite based units: average 26 days/year (6 years Rolling Plan)

An indicative planned maintenance data of fossil fuel based power plants in North America (Canada & USA) and Japan as available in the report of World Energy Council is given below:

Country	Plant Size (MW)	Planned Maintenance (%)		
		2000	2001	2002
North America	100-199	7.1	7.0	6.6
(Canada & USA)	200-299	6.9	8.1	4.1
	400-599	5.5	7.5	6.3
Japan	300-399	17.7	8.7	21.1
	400-599	14.6	16.6	13.5

However, comparison of planned maintenance data of Thermal Plants in India with above would not be justified in view of high ash content in Indian coal and abrasive nature of ash which entails more plant maintenance.

* Annual shut-down period of hydro plants for planned maintenance is of 30 day World-wide acceptable norms for annual maintenance of hydro units are not availabl
* Average annual shut-down period of Nuclear Power Plants in India is about 20 da and it compares well with the international standards in this regard.

(c) and (d) A Working Group was set up by the Ministry of Power in February, 200 under the Chairmanship of Sh. P.K. Kukde, Technical Director (Generation), MSEB t review the norms for planned maintenance period for boiler and turbo-generator sets a specified in the Report of the Committee on Maintenance procedures in large therma power stations set up by Government of India in February, 1985 (Srinivasan Committee and also to set the latest norms for planned maintenance of thermal power plant equipment.

The Working Group in its Report, submitted in March, 2001, had concluded that i should be possible to reduce the maintenance outage period of boiler & turbo-generator b creating separate Maintenance Management Cell at Station Level. The Working Group had *inter alia,* recommended five/six years Rolling Plant for Coal/Lignite based stations with a average annual outage of about 28 days for untis of 200/210/250/500 MW as against 51 days for 210 MW and 63 days/unit/year for 500 MW followed earlier which could lead t saving of down time of 23 days/unit/year for 200/210/250 MW units and 35 days/unit/yea for 500 MW. The average overhaul period of 33 days/year has been recommended by the Kukde Committee for units of less than 200 MW.

The performance of thermal & hydro power plants in the country including the study of shut-down period of generating units in the various sectors is also analyzed in CEA on a annual basis. The details of sector-wise annual shut-down period of thermal (coal & lignite) & hydro power plants in the country for the year 2006-07 are given below:

Category	Planned Maintenance (%)	Forced Outage(%)	Total (%)
Thermal			
Central Sector	6.50	5.41	11.91
State Sector	10.20	9.86	20.06
Pvt. Sector (Utilities)	2.92	3.70	6.62
Hydro			
Central Sector	9.66	6.02	15.68
State Sector	7.09	2.87	9.96
Pvt. Sector	1.79	2.66	4.45

NTPC had undertaken an initiative in 2007 to study operating performance of its 200/210 MW and 500 MW units with respect to similar size units of global utilities. Accordingly, NTPC procured Generating Availability Data System (GADS) containing Generation and Availability Data of 5000 Units operating in USA, Canada and some utilities of Europe and Asia, for the period 1982 to 2005, from North American Electric Reliability Corporation (NERC), USA.

From this data base, average planned and unplanned shutdowns of units of global utilities were extracted and compared with those of NTPC units. The results are tabulated below:

Unit Size (MW)	No. of Units		Planned Outage* (%)	Unplanned Outages* (%)		
	NERC Data base	NTPC	NERC Data base	NTPC	NERC (2005) Data base	NTPC (2006-07)
190-200	81 Units of 40 utilities	33	6.76	5.82	5.69	1.89
475-525	79 Units of 38 utilities	26	8.14	6.39	5.77	3.11

* Average of 2003 2004 and 2005 for NERC database untis and 2004-05, 2005-06 and 2006-07 for NTPC units.

From the above tabulated data, it is evident that the average planned as well as unplanned shutdowns of NTPC units is lower as compared to average shutdown of NERC data base units of similar size.

It would be seen from the above that the total shut-down period for both thermal and hydro power plants in the private sector during the year 2006-07 was considerably less than the Central & State sector plants.

Supply of additional electricity to national grid

1817. SHRIMATI HEMA MALINI: Will the Minister of POWER be pleased to state:

(a) whether it is a fact that Himachal Pradesh would feed additional electricity into the National Grid, in order to help the capital to meet additional demand especially during summer;

(b) if so, at what cost and whether Government has any plan to be self sufficient to meet the increasing power demand;

(c) if so, the details thereof; and

(d) if not, the reasons therefor?

THE MINISTER OF POWER (SHRI SUSHILKUMAR SHINDE): (a) to (d) It has been informed by the Himachal Pradesh State Electricity Board (HPSEB), that they and North Delhi Power Limited (NDPL) have entered into an agreement for energy transactions under a banking arrangement for the period October, 2007 to September, 2008. Under this agreement, NDPL has made available to HPSEB about 157 MU of energy during the winter months of 2007-08 i.e. October, 2007 to February, 2008 HPSEB shall return an equivalent quantum of banked energy to NDPL during the summer months of 2008-09 i.e. June, 08 to September, 08.

This Banking arrangement between NDPL and HPSEB is in form of energy exchange only and no cash transactions are involved.

Memoranda of Understanding/Power Purchase Agreements have been signed by Delhi for availing power from various Central Generating Utilities, like, NTPC, Damodar Valley